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(54) Title: ELECTRONIC COMMERCE SEARCH, RETRIEVAL AND TRANSACTION SYSTEM
(54) Titre: SYSTEME DE RECHERCHE, D'EXTRACTION ET DE TRANSACTION POUR APPLICATIONS DE COMMERCE ELECTRONIQUE

(57) Abstract

The invention provides methods and apparatus for implementing electronic commerce applications over the Internet or in other types of computer systems, in a manner which improves conditions for buying and selling for consumers and vendors. An illustrative embodiment is implemented in the form of an e-commerce web site which includes consumer-specific pages each corresponding to a particular consumer, vendor-specific pages each corresponding to a particular vendor, and a processing system which controls communication between the consumer-specific and vendor-specific pages. The processing system includes or otherwise has access to a set of servers and a corresponding set of databases for processing consumer requests. A given consumer request generated at a particular one of the consumer-specific pages is processed by the processing system such that information from one or more vendors associated with the vendor-specific pages can be supplied to the consumer via the consumer-specific page. For example, a vendor without a commerce-enabled web site can register with the system such that information from the vendor is delivered to the consumer as part of, e.g., a product comparison search. In other embodiments, the consumer-specific and vendor-specific pages may each be implemented as separate web sites which interact with the processing system to provide the desired functionality.

(57) Abrégé

L'invention concerne des procédés et un système permettant de mettre en oeuvre des applications de commerce électronique via l'Internet ou d'autres types de systèmes informatiques, de façon à améliorer les conditions d'achat et de vente pour les clients et les fournisseurs. Un mode de réalisation représentatif de l'invention fait intervenir un site Web de commerce électronique qui comprend des pages réservées aux clients correspondant chacune à un client particulier, des pages réservées aux fournisseurs correspondant chacune à un fournisseur particulier, et un système de traitement qui contrôle la communication entre les pages réservées aux clients et les pages réservées aux fournisseurs. Le système de traitement peut comprendre lui-même un ensemble de serveurs et un ensemble correspondant de bases de données pour le traitement des demandes des clients, ou bien il peut donner accès à ces ensembles. Une demande d'un client donnée, effectuée à une page réservée aux clients, est traitée par le système de traitement, de telle façon que les informations provenant d'un ou de plusieurs fournisseurs, qui sont associées aux pages réservées aux fournisseurs, puissent être fournies au client via la page réservée aux clients. Par exemple, un fournisseur qui ne dispose pas de site Web commercial, peut s'enregistrer dans le système, de telle sorte que les informations provenant du fournisseur soient fournies au client, par exemple en tant que partie d'une recherche de comparaison de produits. Dans d'autres modes de réalisation, les pages réservées aux clients et les pages réservées aux fournisseurs peuvent être mises en oeuvre en tant que sites Web indépendants interagissant avec le système de traitement pour fournir la fonctionnalité désirée.

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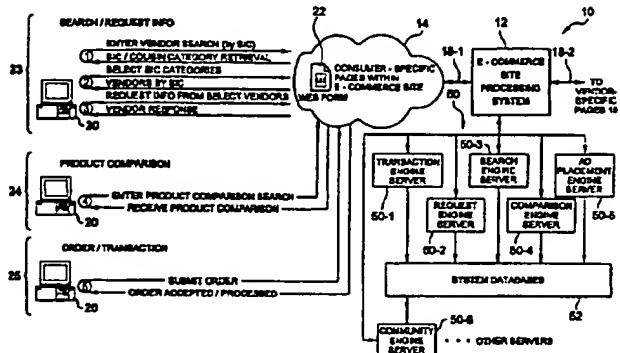
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(54) Title: ELECTRONIC COMMERCE SEARCH, RETRIEVAL AND TRANSACTION SYSTEM



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Description

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**ELECTRONIC COMMERCE SEARCH, RETRIEVAL AND TRANSACTION
SYSTEM**

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Field of the Invention

The present invention relates generally to systems for use in processing search requests, transactions and other electronic commerce communications over the Internet or other types of networks, and more particularly to systems that provide an interface between consumers and vendors in electronic commerce applications.

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Background of the Invention

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The explosive growth of the Internet and World Wide Web has led to the widespread implementation of a variety of e-commerce applications. For example, many companies have established corporate web sites that provide around-the-clock access to product or service information, and permit consumers to place orders on-line. These and other web-based e-commerce applications have fundamentally changed the nature of the vendor-consumer relationship from a primarily vendor-driven model which focuses on marketing and advertising, to a primarily consumer-driven model where a consumer takes the initiative, researches a particular product or service, makes qualified contact with selected vendors who meet his or her needs, and makes a purchase of a product or service.

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20 Search and index engines have become a leading mechanism for consumers to locate and research information on the Internet. Search engines allow consumers to enter keyword information for product categories or company web sites, and provide access to hundreds of "hits" containing the search criteria. An index engine creates indexed lists of entries that consumers can utilize to find specific areas of interest as well as corresponding web sites.

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25 Based on these hits or indexes, consumers can quickly and easily go to the sites relevant to the search criteria. To assist consumers wishing to make on-line purchases, many of these engines have established pre-categorized selections based on various products and services that provide access to e-commerce enabled web sites of the corresponding vendors. For example, nearly every major search engine provides access to at least one vendor site, selling anything from 40 automobiles and books to computers and apparel. A number of web sites have emerged which are dedicated to providing on-line purchasing of particular categories of products or services. These sites include, for example, Amazon.com™, Autobytel.com™, and Travelocity.com™.

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5 These sites are specifically geared towards providing consumers a one-stop shop for specific categories of products or services. Once consumers locate the product or service they desire, they are able to make a purchase on-line, and in many cases, are able to receive the product within 24 to 48 hours.

10 5 With the growth of e-commerce sites on the Web, specialty sites have emerged which provide users with the ability to compare the prices of specific products or services across several different vendors. These comparison sites offer consumers the ability to enter search criteria for a specific product, model number, etc. and receive prices from multiple vendors. Exemplary comparison sites such as those known as BottomDollar™, Jango™, and NetBuyer™

15 10 offer a wide range of products and services from a group of pre-established vendor partners. Once a consumer decides to order a given product or service, the comparison site allows the consumer to purchase the product on-line from the pre-established partner. Current comparison sites often focus on commodity items that have few differentiating factors, such as, for example, books, CDs, software and computer components. This allows for comparisons to be

20 15 made since the differentiators are small, e.g., hardcover v. softcover, if any. Most of the comparison sites also have the above-noted drawback of being in relationships with just a few vendor sites, thereby limiting the number of actual comparisons that are made.

25 30 Despite the tremendous advances made in e-commerce via the Internet, current e-commerce solutions fall far short of providing anything approaching a so-called "perfect market" environment. A perfect market may be viewed as one in which consumers have access to complete, accurate and timely information concerning all companies which sell a given product or service, while vendors have access to complete, accurate and timely information concerning the consumers interested in their products and services. Although current e-commerce initiatives have dramatically increased the access of consumers to companies and

35 25 their products and services, they fail to address adequately the need and desirability of appropriate market conditions for optimum buying and selling. For example, as noted above, comparison sites and other conventional e-commerce sites often provide information only from those vendor sites for which a pre-established relationship is in place, such that consumers only receive price comparisons from an unduly limited number of companies. In addition, such

40 30 comparison sites are generally unable to provide information from companies that do not have an established web site or other web presence, even though such companies may provide a better price than many of their on-line competitors. Moreover, many business web sites are not

equipped with on-line ordering capability, but are instead used solely as a source of information dissemination and customer service. Thus, consumers are not able to buy product and services from these companies on-line. Even those companies that provide e-commerce enabled web sites typically offer an unduly limited selection of product and services, and in many cases only at list prices.

As is apparent from the above, conventional e-commerce systems fail to provide adequate information regarding available products and services, are limited to providing price comparisons for only a relatively small number of on-line vendors, and generally provide a less than optimum buying and selling environment.

Summary of the Invention

20 The invention solves the above-noted problems associated with conventional e-commerce systems by providing a system of integrated web-based hardware and software technologies that automates the exchange of information between consumers and vendors, for
25 15 the purpose of facilitating e-commerce transactions. More particularly, the invention provides consumers and vendors with access to more complete, accurate and timely information than has heretofore been available in e-commerce applications, and automates the request/response process such that consumers are better able to interact with a wide variety of vendors, thereby facilitating the generation of e-commerce transactions. For example, an illustrative embodiment the invention provides an e-commerce web site which serves as a single access point for consumers to search for available vendors of any given product or service, regardless of whether or not the vendors have a commerce-enabled web site or other type of web presence.
30 20 35 The invention allows consumers to automatically submit requests to a number of selected vendors of a given product or service. Consumers can view responses via consumer-specific pages of the e-commerce web site and request additional information or choose to purchase from a selected vendor. Vendors may be notified of consumer requests via vendor-specific pages, and permitted to automatically respond back to the consumer. Vendors utilizing, e.g., a response management system in conjunction with the invention can receive automatic notification of consumers requests, can access valuable internal and external data related to
40 25 45 30 consumers making requests, and can provide automated response capabilities to received requests, dramatically decreasing the time required to reply to consumer requests.

5 In accordance with one aspect of the invention, an e-commerce search, retrieval and
transaction system is provided which includes an e-commerce web site having a set of
consumer-specific pages accessible to a number of consumers, a set of vendor-specific pages
accessible to a number of vendors, and a processing system which controls communication
10 between the consumer-specific and vendor-specific pages. The processing system includes or
otherwise has access to a set of servers and a corresponding set of databases for processing
consumer requests. A given consumer request generated at one of the consumer-specific pages
is processed by the processing system such that information from one or more vendors,
15 including a vendor without a web presence, can be supplied to the consumer via the consumer-
specific pages. For example, a vendor without a commerce-enabled web site can register with
the system such that information from the vendor is delivered to the consumer as part of, e.g.,
20 a product comparison search. In a conventional e-commerce system, by contrast, the absence
of a web presence for the given vendor would generally prevent a consumer from receiving
information from that vendor in an on-line product comparison search or other similar query.
25 In other embodiments of the invention, the consumer-specific pages and vendor-specific pages
may each be implemented as separate web sites which interact with the processing system to
provide the desired functionality.

30 In accordance with another aspect of the invention, the consumer-specific pages may
have associated therewith an individual home page for each participating consumer, such that
35 responses from vendors directed to a given one of the consumers are posted to the
corresponding individual home page of that consumer. Similarly, the vendor-specific pages
may have associated therewith an individual home page for each participating vendor, such that
40 requests from the consumers directed to a given one of the vendors are posted to the
corresponding individual home page of that vendor. The vendors may be notified of consumer
45 requests by any of a number of different techniques, including, e.g., e-mail, facsimile, CTI
application message or broadcast message which includes an embedded identifier of the main
e-commerce site, a posting to the individual home page of the vendor, or via a communication
channel established between the e-commerce web site and a response management system
associated with the vendor. Consumers may be notified of vendor responses using similar
50 techniques, e.g., e-mail, facsimile or a posting to the individual home page of the consumer.
Again, these features of the consumer-specific and vendor-specific pages may be implemented
in a single web site, or in separate web sites.

5 The invention provides a significantly improved buying and selling environment in part
by providing consumers with a single point of access to more complete, accurate and timely
information on vendors of a given product and service than has heretofore been available,
regardless of whether a particular vendor has a web presence or not, while also providing
10 vendors with access to more complete, accurate and timely information regarding consumers.
The invention can thus create optimum buying and selling conditions, i.e., near-perfect market
conditions, for a wide variety of e-commerce applications.

15 **Brief Description of the Drawings**

20 FIGS. 1, 2 and 3 illustrate portions of an illustrative embodiment of an electronic
commerce search, retrieval and transaction system in accordance with the invention.

25 FIGS. 4 through 11 are flow diagrams illustrating exemplary search, information
request, product comparison, transaction processing and ad placement processing operations
which may be implemented in an electronic commerce search, retrieval and transaction system
in accordance with the invention.

Detailed Description of the Invention

30 The invention will be illustrated below in conjunction with an exemplary system for
processing electronic commerce transactions. Although particularly well-suited for use in
20 electronic commerce applications utilizing the Internet or other computer networks, the
invention is not limited to use with any particular type of application, network or network
35 communication protocol. For example, the invention may be applied to electronic commerce
applications which utilize other types of networks, such as, for example, a wide area network,
an intranet or extranet, a telephone, cable or satellite network, a wireless network such as a
25 cellular or paging network, or other type of network as well as combinations or portions of
these and other networks.

40 The terms "query" and "request" as used herein are intended to include any type of
information or transaction request that may be generated by a user. Examples of user queries
45 which may be processed using the invention include plain-text queries manually entered by a
user in a display generated by a browser, search engine, graphical user interface or other
30 application program, voice-based queries entered by a user equipped with, e.g., a telephone, a
computer with speech recognition software, etc., client requests generated in accordance with

5 the Hypertext Transfer Protocol (HTTP), as well as combinations of these and other types of
 requests. The term "industry code" as used herein is intended to include Standard Industrial
 Classification (SIC) codes as well as any other type of codes or identifiers which may be used
 to specify goods or services. The term "web" as used herein is intended to include not only the
10 5 World Wide Web portion of the Internet, but more generally any other portion of the Internet,
 the entire Internet itself, or other similar wide area, metropolitan area, national or international
 computer communication networks. The term "page" as used herein is intended to include a
15 10 web page, any portion of a web page, an electronic document, form, window, display or any
 other piece of electronic information which may be delivered over a network and presented to
 a user in, e.g., a web browser or other client application program. A given page therefore may,
 but need not, be accessible via an identifier such as its own uniform resource locator (URL).
20 20 Consumer-specific pages and vendor-specific pages are examples of pages which are accessible
 to particular consumers and vendors, respectively. For example, as will be described herein,
 a given consumer may have a consumer-specific home page on an electronic commerce web
25 25 site in accordance with the invention. Similarly, a given vendor may have a vendor-specific
 home page on the electronic commerce web site. The term "consumer" as used herein is
 intended to include any user who requests information or otherwise communicates with a
 vendor using the e-commerce system of the invention, such as, for example, a home-based
30 30 consumer, an office-based business buyer, and other types of users.

20 FIGS. 1, 2 and 3 show an illustrative embodiment of the invention in the form of an
 electronic commerce (e-commerce) search, retrieval and transaction system 10. The system 10
 includes a combination of servers, one or more web sites, databases and software applications
 that provides an automated method for consumers and vendors to interact for the purpose of
 consummating a business transaction. As shown in FIGS. 1 and 2, the system 10 includes an
25 25 e-commerce web site comprising a processing system 12, a set of consumer-specific pages 14
 and a set of vendor-specific pages 16. The electronic web site may be accessed in a
 conventional manner, e.g., by a user entering a designated URL into a web browser or other
 client application program.

45 45 The processing system 12 may be, for example, a computer or group of computers. The
 processing system 12 interacts with the sets of pages 14, 16 as indicated at 18-1 and 18-2,
 respectively. Each of the consumer-specific pages 14 in the illustrative embodiment
 corresponds generally to a single consumer who has registered with or otherwise associated
50

5 himself or herself with the e-commerce web site. Similarly, each of the vendor-specific pages
10 16 corresponds generally to a single vendor who has registered with or otherwise associated
themselves with the e-commerce web site. Communications between the consumer-specific
15 pages 14 and a corresponding set of consumers, and between the vendor-specific pages 16 and
a corresponding set of vendors, may be, for example, via Transmission Control
Protocol/Internet protocol (TCP/IP) connections established over the Internet in a conventional
20 manner.

25 A given consumer uses a computer 20 to access a corresponding one of the consumer-
specific pages 14, e.g., by accessing the e-commerce web site via entry of the appropriate URL,
30 and then selecting an option at the site for providing access to a consumer-specific page.
Communications between the computer 20 and the consumer-specific pages 14 are via
conventional Internet connections. One or more of the consumer-specific pages 14 may
incorporate a web form 22 which has a number of predetermined fields in which a given
35 consumer can enter information. The consumer-specific pages 14 serve as a primary entry
point for consumers to the e-commerce web site of the system 10. This site may be accessed
by the consumers directly, through one or more portal partners, or in any other suitable manner.
As will be described in greater detail below, from this site consumers can, e.g., enter a new
40 search or view responses from previously entered requests. It should be noted that the
invention may be configured to receive consumer requests from a wide variety of devices other
than computer 20. For example, consumer requests may be generated using a telephone, an IP
telephony device, a set-top box associated with a television set, a mobile computer, a hand-held
45 computing device such as a personal digital assistant (PDA), or any other type of device
suitable for accessing a web site.

50 The consumer-specific pages 14 may include individual "home" pages for different
consumers. For example, in order to view vendor responses, a given consumer can enter a
password or other identifying information which provides access to a home page established
for that consumer within the consumer-specific pages 14. From this page, the consumer can
review current and past requests, current and past responses, submit additional requests,
55 compare received responses, and order a given product or service. This information is
30 maintained and stored by the system for a predetermined period of time, which can be set by
the consumer within a designated allowable range. Other consumer information can be
managed and maintained from this page including, for example, password information,

5 preferred notification method, purchase criteria, shipping instructions, and preferred method
of payment. In alternative embodiments of the invention, the individual consumer home pages
on the system may be established and maintained on a separate web site corresponding to the
set of consumer-specific pages 14. In this case, consumers may enter the consumer-specific
10 pages web site via entry of a separate URL, but the consumer-specific pages will generally still
be controlled by the processing system 12 of the main e-commerce web site. Information
associated with the consumer-specific pages may be stored, for example, in one or more of a
15 set of system databases 52, in a memory or memories associated with one or more of a set of
servers 50 or the processing system 12, as well as combinations or portions of these and other
20 storage locations, including a memory associated with one or more consumer computers 20.

20 A web browser or client application associated with computer 20 may include a desktop
navigational assistant (DNA) which facilitates the use of the system 10 by a consumer. For
example, the DNA may be designed to facilitate the consumer interaction by bringing together
25 the data that the consumer wants, and applications that manipulate that data within a web
browser environment. It may also allow the user to maintain the data off-line, within the client
environment, rather than having to return to the processing system 12 repeatedly to obtain,
analyze and access the data that the consumer already "owns," e.g., from previous interactions
30 with the system. The DNA may also provide controlled access to the consumer-specific page
20 established for the consumer on the system. This allows the consumer to have, e.g., secure
anonymous communication with vendors, yet avoids the problem of junk e-mail and providing
information to a vendor that may intrude on the consumer's privacy. A consumer equipped
35 with a core DNA may be provided with the ability to update the information within that DNA,
to modify the DNA, e.g., by saving on top of it, or to enhance the DNA, e.g., by adding
25 comparison or other features to the core DNA, at any time. An exemplary set of features
provided by a DNA in accordance with the invention includes: persistent storage of
information; one or more applications and/or applets which allow consumers to store, retrieve,
manage and analyze information both on-line and off-line; automation of information and quote
40 requests; instant ranking of requests via multiple purchase criteria; customized selection of
purchase criteria such as price, selection, availability, location, warrantee and finance options,
etc.; and facilitation of order processing. Alternative DNAs may incorporate only a subset of
45 these features, and may also include features other than those listed above.
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5 The set of vendor-specific pages 16 serves as a primary entry point for vendors to the
e-commerce web site of the system 10. Like the consumer-specific pages 14, the vendor-
specific pages 16 may be accessed directly, through one or more portal partners, or in any other
suitable manner. For example, a given vendor can enter the URL for the main e-commerce web
10 site, and then select an option providing access to a vendor-specific page. Vendors accessing
the e-commerce site can choose to register with the system, verify and change vendor profile
information, and access an individual "home" page within the set of vendor-specific pages 16.
15 Such a home page may be established on the e-commerce site, e.g., for any vendor who has
registered with the system and selected a valid password. From this page, a vendor will be able
20 to view past and current consumer requests, respond to requests, and maintain vendor profile
information such as notification method, company data, and product and service information.
Like the consumer-specific pages, the vendor-specific pages on the system may be maintained
25 as a separate web site in alternative embodiments, and this separate web site may be accessible
via a URL which is different than that of the main e-commerce site or any separate consumer-
specific pages site. Information associated with the consumer-specific pages may be stored, for
30 example, in one or more of the system databases 52, in a memory or memories associated with
one or more of the servers 50 or the processing system 12, as well as combinations or portions
of these and other storage locations.

35 In the illustrative embodiment, as shown in FIG. 1, the interaction of a given consumer
with a corresponding one of the consumer-specific pages 14 may include a search/request
information stage 23, a product comparison stage 24, and an order/transaction stage 25. In each
40 of the stages, requests or other information entered by the consumer via one or more of the
pages 14 are supplied, if necessary, to the processing system 12. The information may be
entered using the web form 22, which may include different portions, windows, fields, etc. for
45 each of the stages 23, 24 and 25. Alternatively, a different web form 22 may be generated by
one or more of the pages 14 for each of the stages. The processing system 12 accesses the
servers 50 in order to process the information entered by the consumer, and formulates a
50 suitable response which is supplied to the consumer via consumer-specific pages 14 and
computer 20. In the portion of the search/request information stage 23 designated as step 1, the
consumer initiates a vendor search by Standard Industrial Classification (SIC), e.g., by selecting
from a number of available search modes, and entering keywords characterizing the products
or services of interest. It should be understood that references herein to SIC codes are by way

5 of illustration only, and that the invention can be used with other types of industry codes, as well as other types of identifiers of products or services.

10 A response generated by processing system 12 in step 1 of stage 23 includes retrieved SIC categories and corresponding "cousins" SIC categories. The cousins categories represent, 5 e.g., categories of products or services which may be related in a non-hierarchical, e.g., non-parent/child, manner to the SIC categories which correspond directly to the keywords entered by the consumer. These and other cousins relationships are described in greater detail in U.S. 15 Patent Application Serial No. 09/084,810 filed May 26, 1998 in the name of inventors J.M. Ivler and Frank Rubin and entitled "Query Processing Based on Associated Industry Codes," 10 which is incorporated by reference herein. In step 2 of stage 23, the consumer selects a number of SIC categories from among the categories retrieved in step 1. The processing system 12 responds via one of the consumer-specific pages 14 with a list of vendors for the selected SIC 20 categories. In step 3 of stage 23, the consumer requests information from one or more of the vendors, and the processing system 12 responds via one of the consumer-specific pages 14 with 25 the vendor response or responses.

25 In the product comparison stage 24, which includes a single step 4 in this embodiment, the consumer selects a product comparison search from among a number of available options provided by the e-commerce web site. Alternatively, the type of search desired by the 30 consumer could be automatically inferred from information entered by the consumer, e.g., if 20 a consumer enters a specific type of product it may be inferred that the consumer would desire a product comparison search. The processing system 12, operating in conjunction with one or 35 more of the servers 50 and databases 52, generates comparison information in a manner to be described in greater detail below, and delivers the information in a response to the consumer. Similar comparisons could be generated for services. In the order/transaction stage 24, which 40 includes a single step 5 in this embodiment, the consumer submits an order for a particular product or service, e.g., based on the results of the comparison search in stage 24. The processing system 12 delivers the order to the appropriate vendor, and sends an acknowledgement to the consumer that the order has been, e.g., accepted by the vendor and/or 45 processed. Additional examples regarding certain of the processing operations associated with 30 stages 23, 24 and 25 will be described in greater detail in conjunction with FIGS. 4 through 11 below.

5 Referring to FIG. 2, one or more of the vendor-specific pages 16 may include a web
form 28 with a number of predetermined portions, windows, fields, etc. in which information
can be entered by a given vendor and/or a service agency partner associated with the vendor.
10 A number of vendors 30A, 30B, 30C and 30D and a service agency partner 32 communicate
5 with the vendor-specific pages 16 of the e-commerce web site via, e.g., conventional Internet
connections. Computers 34A, 34B, 34C, 34D and 34 are associated with the vendors 30A,
30B, 30C and 30D and service agency partner 32, respectively. A response management
15 system 40-1 equipped with response management software 42-1 is associated with the vendor
30D. A direct connection is shown between computer 34D of vendor 30D and the response
management system 40-1. Response management system 40-1 is also coupled to a set of
20 databases 44 which in this embodiment includes internal data 44-1, external data 44-2, data
storage software (DSS) systems 44-3, enterprise resource planning (ERP) and other information
44-4. Another response management system 40-2 equipped with response management
software 42-2 is associated with the service agency partner 32. It should be understood that
25 each of the vendors, the service agency partner and the response management systems in FIG.
2 may be systems including large numbers of computers, databases, networks and other
processing, storage or communication elements, and their association with a single computer
or other device in FIG. 2 is for simplicity of illustration. The computers 34A, 34B, 34C, 34D
30 and 34, as well as other computers shown or described in a similar manner herein, may
therefore each be viewed as groups of computers and other processing, storage or
communication elements arranged in a conventional manner.

35 In accordance with the invention, the vendors that can be supported by the e-commerce
system 10 need not all have a web presence, e.g., a commerce-enabled web site or other type
of vendor-specific web site. It will be assumed for the following description that none of the
40 25 vendors 30A, 30B, 30C and 30D have a web presence, although the invention can of course
also be applied to vendors which do have a web presence. As shown in FIG. 2, the vendor 30A
has both e-mail and web access, the vendor 30B has a fax capability and web access, the vendor
45 30C has web access only, and the vendor 30D has web access that provides a direct connection
30 to the e-commerce web site via the response management system 40-1 and computer 34D.
Similarly, the service agency partner 32 has a direct connection to the e-commerce web site via
the response management system 40-2 and computer 34.

5 The communication capabilities of the various vendors influence the manner in which
communications take place between the vendors and elements of the e-commerce web site, e.g.,
10 vendor-specific pages 16 and the processing system 12. For example, the e-commerce web site
in the illustrative embodiment communicates with vendor 30A, e.g., to send a request for
15 information or an order, using an e-mail alert with an embedded URL specifying the location
of the main e-commerce web site. The vendor 30A can then access the e-commerce web site
20 and the vendor-specific pages 16 via the embedded URL. The e-commerce web site
communicates with vendor 30B using a fax notification with a URL specifying the
25 corresponding e-commerce web site, such that the vendor 30B then accesses the web site using
the embedded URL. The e-commerce web site communicates with the vendor 30C via a
30 periodic web check, which may be performed manually by a management entity, e.g., a system
administrator, maintenance entity, service agency partner, etc. associated with the vendor-
35 specific pages 16 and processing system 12. Again, the vendor 30C responds to a URL
specifying the e-commerce web site which includes the vendor-specific pages 16. It should be
40 noted that types of vendor access other than those described herein may also be utilized in the
system 10.

30 The vendor 30D in FIG. 2 communicates with the e-commerce web site through a direct
connection established via the response management system 40-1. The e-commerce web site
35 uses this connection to provide a real-time alert notification, via a response application program
supported by response management system 40-1, to the vendor 30D in the event of, e.g., a
40 request for information or an order. The vendor 30D responds, also via the response
application program, directly to, e.g., a corresponding one of the vendor-specific pages 16 of
45 the e-commerce web site. Order requests and responses also flow between one of the vendor-
specific pages 16 and the vendor 30D using the response management system 40-1, as indicated
50 at 35D. The service agency partner 32 has a similar direct connection with the vendor-specific
pages 16 of the e-commerce web site via the response management system 40-2, and order
requests and responses flow between, e.g., one of the vendor-specific pages 16 and the service
agency partner 32 as indicated at 35. The e-commerce web site provides real-time alert
55 notification to service agency partner 32, via a response application program supported by
response management system 40-2, and the service agency partner 32 responds, also via the
response application program, directly to one of the vendor-specific pages 16 of the web site.

5 The response management systems 40-1 and 40-2 are generally implemented as completely
separate systems.

10 Advantageously, the invention allows vendors with different communication
capabilities, e.g., the vendors 30A, 30B, 30C and 30D, to communicate with an e-commerce
15 web site including a set of vendor-specific pages 16 and corresponding processing system 12,
such that consumers are provided with the widest possible range of sources of various products
and services. For example, vendor 30D, which is assumed to have web access but no web
presence in the illustrative embodiment, is nonetheless accessible to consumers through the e-
commerce web site via a direct connection with the response management system 40-1. As a
20 result, consumers accessing the consumer-specific pages 14 may obtain, e.g., product
comparison information from vendor 30D, even though that vendor does not have a web
presence. In a conventional e-commerce system, the absence of a web presence for vendor 30D
would generally prevent a consumer from receiving information from that vendor in, e.g., an
on-line product comparison search.

25 Referring again to FIG. 1, the processing system 12 is coupled to the set of servers 50
which in this embodiment includes a transaction engine server 50-1, a request engine server 50-
2, a search engine server 50-3, a comparison engine server 50-4, an ad placement server 50-5
30 and a community engine server 50-6. Alternative embodiments may include a number of
additional servers, or a subset of the servers shown. Each of the servers is coupled to one or
20 more of the set of system databases 52. The servers 50 may each represent a computer or a
group of computers. One or more of the servers 50 may be co-located with the processing
35 system 12 of the e-commerce web site, e.g., may be a part of the processing system 12, or may
be connected with system 12 via a local area network or other type of network. Alternatively,
one or more of the servers may be remote from the processing system 12 and may communicate
25 with system 12 via an Internet connection or other conventional network connection.

40 FIG. 3 illustrates an exemplary arrangement of system databases 52 in greater detail.
The databases 52 in this embodiment include transaction data 60-1, request data 60-2, vendors
by SIC code 60-3, product/service data 60-4, advertising/placement data 60-5, product/service
45 cross reference data 60-6, and cousin relationships by SIC code 60-7. The vendors by SIC code
30 60-3 may include, e.g., a global database of vendors based on SIC listings, while the cousin
relationships by SIC code includes an enhanced database of "cousin" products/services cross
referenced by SIC listing, e.g., car buyers may also want information from insurance, car

5 stereos, finance suppliers, etc. The product/service data 60-4 may include information such as
 categories, brands, models, etc.

10 The databases 52 in this embodiment are interconnected as shown, and each is
 accessible to one or more of the servers 50-1 through 50-6. The interconnections may be via
 15 local area network, wide area network, Internet, or any other type of network. In addition, it
 should be noted that the databases 52 may represent different portions of a single database or
 20 a group of co-located or remote databases. The transaction data 60-1 is accessible to a service
 agency partner 70 equipped with a computer 71. The transaction data 60-1 is similarly
 25 accessible to an e-commerce partner 72 equipped with a computer 73. Similarly, the
 30 product/service data 60-4 is accessible to a vendor 74 equipped via a computer 75 providing
 35 web access, and the advertising/placement data 60-5 is accessible to a service
 40 agency/advertising placement partner 76 equipped with a computer 77.

 The associated with the vendor 74 is an agent based maintenance element 78, which uses
 45 an extensible mark-up language (XML) or other suitable technique for updating product/service
 50 data generated by vendor 74 and other vendors in the system. The system 10 further includes
 55 a maintenance web site 80 which accesses vendor data 60-3 in order to provide changes,
 60 updates, etc. to the stored data. In the embodiment shown, vendor 82 and service agency
 65 partner 84 are accessing the maintenance web site 80, but other partner and/or vendor elements
 70 of system 10 could also access maintenance web site 80. Communications between one or
 75 more of the databases and partner or vendor elements 70, 72, 74, 76, 82 and 84 may be via
 80 conventional Internet connections established using, e.g., web access provided by the
 85 corresponding computers 71, 73, 75, 77, 83 and 85, respectively.

 The operation of the e-commerce search, retrieval and transaction system 10 will now
 90 be illustrated in greater detail with reference to the exemplary flow diagrams of FIGS. 4
 95 through 11. It should be noted that any databases or other stored data referred to in the flow
 100 charts of FIGS. 4 through 11 may correspond generally to one or more of the system databases
 105 52 described above, or suitable portions thereof. Referring to the flow diagram 400 of FIG. 4,
 110 a consumer 102 wishing to purchase products or services enters, e.g., a corresponding one of
 115 the consumer-specific pages 14 of the e-commerce web site using a web browser or client
 120 application 103. This access may be, for example, via a search engine, portal partner sites, an
 125 Internet Service Provider (ISP) site, direct access, or other suitable techniques. A consumer-
 130 specific page may be established for the consumer upon an initial access to the e-commerce
 135 system 10.

5 web site, at which time the consumer can register with the system by entering certain
10 identifying information, and the system responds by setting up a corresponding consumer-
 specific page for that consumer. At the corresponding one of the consumer-specific pages 14,
15 the consumer 102 is able to enter a keyword or natural language, i.e., "plain English," search
 query for any product or service, i.e., television, home loan, new car, etc. The flow diagram
 400 shows this process in greater detail, and corresponds generally to steps 1 and 2 of stage 23
 in FIG. 1.

15 After the consumer enters a search query, a search engine, which may be implemented
 by the processing system 12 operating in conjunction with the search engine server 50-3,
20 executes the query by first parsing the query in step 402. The parsing process makes use of a
 thesaurus 404 which is maintained in step 406 by a management entity 110. The management
25 entity 110 may be, for example, an administrator of the e-commerce web site, a maintenance
 entity, etc. In steps 408 and 414, the search engine obtains SIC topics and corresponding
 cousins topics, respectively, by searching through one or more of the databases 52 to retrieve
 15 vendor categories that match keyword entries based on SIC codes, e.g., automotive
 manufacturers, dealerships, wholesalers, etc. and the corresponding cousins, e.g., automotive
 finance companies, insurance providers, car stereo manufacturers, etc. As part of this process,
 the search engine accesses a database 410 of cousin relationships by SIC codes, e.g., database
 30 60-7 of FIG. 3, and a database of vendors by SIC codes, e.g., database 60-3 of FIG. 3. The
 20 database 410 is updated by management 110 in a cousins update step 412. The database 415
 is updated using a process 418 which is described in greater detail in conjunction with FIG. 5
 35 below. The FIG. 5 process is initiated upon receipt of a request 420 from vendor 104 to update
 previously stored information for that vendor, or to include the vendor as a new vendor.

25 The SIC and cousin categories retrieved in steps 408 and 414, respectively, are
 40 presented to the consumer 102 via the web browser or client application 103, and the consumer
 then selects one or more desired categories. In other embodiments, the consumer could be
 45 limited to selecting a single category, with the selection process and following steps being
 repeated if information from another category is also desired. After the consumer has selected
 30 the desired SIC category or categories, the consumer submits the selection, and the search
 engine retrieves all or a designated subset of the vendors across the selected SIC categories.
 In step 422 of FIG. 4, the system interacts with the consumer 102 via web browser or client
 50 application 103 to refine the retrieved information using factors such as total number of items

5 to be retrieved and zip codes of vendors. Depending on the specificity of the consumer search, vendors may also be retrieved based on specific matches to product and service selections, e.g., only manufacturers of minivans. Search results can also bring back specific branded products and services if available.

10 5 In step 424, random vendor records matching the search criteria are selected by SIC, using information from the database 415. In step 426, a list of vendor records, e.g., a list of the top 10 matching records based on various specified criteria, is generated. Step 428 determines if there are additional vendor records to be retrieved for each selected SIC. If there are no such records, the process moves directly to step 436. If there are, step 430 obtains the records from
15 a database of placed records 432. The placed records 432 are determined using a process 436 to be described in greater detail in conjunction with FIG. 6. The records obtained in step 430 are arranged in a designated order in a record placement step 434 which delivers information to be used in the FIG. 6 process. Any new SIC records are delivered to step 426 and used to repopulate the lists of records for the selected SICs.

20 10 15 The process as illustrated in FIG. 4 also includes a capability for incorporating "community" information into the information delivered to the consumer. This capability is implemented at least in part using the community engine server 50-6 of FIG. 1. As shown in FIG. 4, the process in step 436 adds to the retrieved vendor records additional information such as consumer reviews and community links. This additional information is obtained in this
25 20 30 embodiment from a review server 437 and a forum server 438, both of which may be elements of or otherwise associated with the community engine server 50-6. Other types of information, such as chat information and news information, may also be added in step 436. The operation of the community engine server will be described in greater detail in conjunction with FIG. 11. This community engine server capability allows consumers to interact with other consumers
35 25 40 to obtain and disseminate valuable information, such as where the best prices can be obtained, what product or service features are most useful, and so on.

45 30 45 In step 440, the retrieved information is configured for display, and is subsequently delivered to the web browser or client application 103 for presentation to the consumer 102. The consumer can then choose to select all or a subset of vendors from the retrieved SIC categories. For example, the search engine may retrieve detailed vendor information such as company name, address, contact information, product/service description, and other types of data. This retrieved information is also presented to the consumer via the web browser or client
50

5 application 103. It should be noted that various filters may be applied to ensure that only the
most relevant information is delivered to consumers. For example, if a particular good or
service is distance sensitive, e.g., can only be delivered to consumers within a particular
10 geographic proximity of a given vendor, a filter could be used to ensure that only eligible
consumers receive information on the particular good or service.

15 FIG. 5 shows a flow diagram 500 illustrating the process 418 of FIG. 4. A database
partner 502 associated with the system 10 is equipped with a web browser or client application
503. The database partner 502 may represent, for example, vendor 82 or service agency partner
84 associated with the maintenance web site 80 of FIG. 3, or one of the other entities shown
20 in FIG. 3, e.g., service agency partner 70, e-commerce partner 72, or vendor 74, or
combinations of these and other entities. The database partner in step 504 via the browser or
application 503 obtains new database records from a set of new records 506. The new records
25 506 are generated in response to a request 420 to update or include, received from a web
browser or client application 105 of a vendor 104. It should be noted that the web browser or
client application 105 of vendor 104 may be, for example, part of a response management
system associated with or otherwise accessible to that vendor. In step 510, the database partner
30 502 uploads database change information to a changes database 512, and then in step 514
updates one or more of the system databases, e.g., the vendors by SIC code database 415. The
database partner in step 518 makes changes to archives 520 to reflect the update. The database
35 partner 502 can also access the archives 520 as part of an archive retrieval step 522 in order to,
for example, determine a time of last update for a particular vendor record.

40 FIG. 6 shows a flow diagram 600 illustrating the process 436 of FIG. 4. In step 602,
a determination is made as to whether a record has been created for the vendor 104. If not, a
45 revenue client record is added in step 604, and a set of unvalidated revenue client records 606
is updated to reflect the added record. After the added record is updated in step 608 by
management 110, the record is stored as a validated revenue client record 614. If it is
determined in step 610 that an existing record is to be modified, the modification takes place
50 in step 612, and the modified record is stored in the set of validated client records 614. In the
event a vendor fails to pay any fees associated with being part of the system 10, e.g., any fees
associated with receiving requests or orders from processing system 12 via the set of vendor-
specific pages 16, the management 110 in step 616 updates a delinquent payment database 618
to reflect the failure of the vendor to pay the fees.

5 In step 620 a determination is made as to whether the vendor 104 would like to bid for
location in, e.g., a retrieved list of vendors displayed to the consumer 102 in response to a
query. If so, the current position bids by SIC are reviewed in step 622, using information from
a monthly bidding database 624, e.g., a database storing information regarding the bidding
10 activity for a particular period of time such as the previous month. In step 626, the vendor bids
for a location, i.e., a position in the list of retrieved vendors for a particular SIC. If it is
determined in step 628 that the vendor is creditworthy, e.g., based on information from the
15 database 618, or is otherwise allowed to update a bid position, the vendor bid, if accepted, may
be entered in the bidding database 624. The management 110 keeps the database 618 up to
date, e.g., in step 630 by updating to reflect payments from the vendor 104. If it is determined
20 that the vendor in step 632 has requested to review the status of their records, bidding
information and/or other information, such a review can take place in step 634. The current
status can be displayed to the vendor 104 using information from a display log 636. The
management 110 generates bills for the vendor 104 in step 640. As previously noted, the bills
25 may be for fees associated with participation in the system 10, e.g., fees associated with
receiving information requests or orders from consumers, or fees associated with accepted bids
for particular positions in lists of vendors displayed to the consumer.

30 Referring to the flow diagram 700 of FIG. 7, after reviewing the retrieved information
generated in the previously described search process, the consumer 102 may submit a request
35 for additional information from all or a subset of the retrieved vendors. The system 10 provides
the consumer with an on-line customizable request form, e.g., web form 22 of FIG. 1, which
allows the consumer to specify the information they desire from the selected vendors. This
40 information could include, e.g., detailed product and pricing information, as well as additional
criteria such as warrantee, finance and store location information. Once the consumer
45 completes the request, the consumer submits the request. The consumer request is anonymized
in step 710, and the identity of the consumer is stored in a consumer identity database 712. The
anonymization process, which is optional, may remove specific consumer identifying
50 information, e.g., the consumer e-mail address, from the request. Anonymization ensures that
vendors will have to use the processing system 12 to respond to the consumer request. This
allows the information to be controlled and automatically responded to, and also protects the
consumer from the possibility that a vendor will misuse the information. The consumer may
also be provided with the ability to transmit information requests directly to the corresponding

5 vendors through standard methods, e.g., e-mail, telephone, facsimile, etc. In other embodiments, the vendor may be anonymized, in addition to or instead of anonymization of the consumer.

10 5 In step 714 of FIG. 7, the information request is stored in a database 715 of consumer requests. Once a consumer submits the information request, it is processed via processing system 12 using the request engine server 50-2. The request may be posted on the vendor-specific pages 16 for viewing by the selected vendors. In step 716, the appropriate vendor or vendors are notified of the information request. As shown in step 718, the notification may be implemented using, for example, an e-mail alert with an embedded URL, facsimile with an embedded URL, periodic web checks of the vendor "home" page in the set of vendor-specific pages 16, a call from a service agency partner, or direct connection through a response management system. As part of this process, vendor information may be retrieved from a vendor database 720. The request may be supplied to the web browser or client application 105 associated with the vendor 104, or otherwise delivered to the vendor 104.

15 10 The vendor 104 views the consumer information request, e.g., via the web browser or client application 105, and then responds to the consumer in step 722. The vendor may respond using the web form 28 associated with the set of vendor-specific pages 16 by entering the appropriate response information. The vendor may also include attachments such as product literature, responses to frequently asked questions (FAQs), etc. The vendor may also provide 20 15 alternative methods for consumers to view additional information including URLs, a fax back service, an 800 number, etc. After a vendor has completed the response web form 28, that vendor can automatically generate a reply by, e.g., selecting a "reply" button in web browser or client application 105. The vendor may also include specific ordering information to allow 25 20 the processing system 12 to present an on-line invoice for the product or service in the event the consumer elects to place an order. As part of the response process, the vendor may access 30 25 the stored consumer requests 715. Step 724 determines if more than a specified maximum number of vendors have responded to a consumer request, and step 725 determines if a vendor has not replied to the consumer request within a specified threshold vendor response time. If 35 30 the number of responding vendors exceeds the specified number, or if the elapsed time since submission of the request is past the threshold, the consumer is notified as shown in step 726.

40 35 The vendor reply may be supplied to the consumer via the consumer-specific pages 14. The consumer can also select alert notifications that will cause the system to automatically alert

5 the consumer to receive responses. These options include, for example, e-mail notification
with embedded URL, paging notification, or notification via a DNA application which may be
part of the web browser or client application 103. In order to view a particular vendor reply to
an information request, the consumer may be required to access the consumer-specific pages
10 14 and enter suitable identifying information, e.g., a valid password. The consumer will then
be provided with a listing of vendor responses. The consumer can view the vendor responses,
15 analyze and compare responses in, e.g., a consistent form viewer, and can submit request for
additional information. The information request and response process illustrated in the flow
diagram of FIG. 7 corresponds generally to step 3 of stage 23 in FIG. 1. It should be noted that
20 information requests such as those described in conjunction with FIG. 7 could also be processed
through a third party partner, e.g., the service agency partner 70 or the e-commerce partner 72
of FIG. 3. In such an embodiment, the partner could be equipped with a response management
system providing a direct connection to the e-commerce site associated with system 10.

25 The product comparison operation, i.e., step 4 of stage 24 in FIG. 1, will now be
described in greater detail with reference to the flow diagram 800 of FIG. 8. The product
30 comparison search option allows a consumer who is looking for a particular product or service
to compare the best purchase option from among all vendors associated with the set of vendor-
specific pages 16. In the comparison option, a request is submitted to processing system 12 via
35 one of the consumer-specific pages 14, and the processing system in conjunction with the
comparison engine server 50-4 will locate all available vendors of the selected product and
retrieve pricing and other consumer selected information, e.g., warranty, finance, etc. This
40 feature allows those consumers who already know the specific product they are looking for to
bypass the request/response search option described in conjunction with FIGS. 4 through 7.
This feature can also be used to take advantage of stored product and service information which
45 is collected by third party agencies, as well as standard e-commerce data forms such as XML
forms which are posted, e.g., on company web sites.

50 It is assumed in this example that the consumer 102 is aware of an actual product that
he or she wishes to purchase. After being presented with a natural language query interface via
55 web browser or client application 103, the consumer 102 enters a "plain English" query for the
product of interest. The domain of the query and/or an identifier of the desired item is
30 determined by parsing the query in step 802. This process may make use of a thesaurus 804
and a product/service cross-reference 806, both updated in a thesaurus update step 808 by a

5 management entity 110 associated with the processing system 12. Once the domain and/or
item have been extracted, matching base records are obtained in step 812 by searching the
appropriate product/service data 814, e.g., the product/service data 60-4 of FIG. 3. In step 820,
a determination is made as to whether a given retrieved record was updated within a specified
10 threshold time period. If the elapsed time since the last update of the record is past the
threshold, the record is updated in step 822. The record can be updated by, for example,
15 launching an agent that will go to an appropriate vendor web site 826, e.g., a web site not
associated with the vendor-specific pages 16, to extract the product information from, e.g.,
XML structures and records within that web-site. A record update can also be initiated by an
20 update request, in step 824, from either vendor 104 or management 110. Updates will also
cause the corresponding records to be altered in the product/service data 814, e.g., by supplying
25 processed XML from the update process to database 814. In other embodiments, updates could
also be performed by a third party, e.g., a service agency partner, which solicits information
directly from the vendors, instead of or in conjunction with automatic scanning of vendor web
sites.

For any given consumer query, it may be possible that the records within the
product/service data 814 are insufficient to provide a complete response. In this case, a
determination may be made in step 828 that more detailed information is necessary. If needed,
30 this additional information is obtained in step 830. Obtaining this information may involve,
e.g., visiting the web site 826 of the vendor and attempting to parse the complete product
description from, e.g., detailed XML found on the web site. For example, if a consumer has
35 entered a comparison query which specifies a feature not specifically contained in any retrieved
record, it may be possible to extract information regarding the feature from the web site 826.
Other types of information obtained in step 830 may include processed XML from an updated
40 record. A portion of the additional information obtained in step 830 may be returned to the web
site 826. In step 832, community information, such as consumer reviews from review server
437 and community links from forum server 438, are added to the retrieved information. After
all necessary records and any additional information have been obtained, step 840 generates a
45 table of the records, and the table is provided to the web browser or client application 103 for
30 viewing by the consumer 102. Advantageously, this aspect of the invention allows a consumer
to hide their identity from a vendor or vendors until the actual time of purchase.

5 The order/transaction processing operation, i.e., step 5 of stage 25 in FIG. 1, will now
be described in greater detail with reference to the flow diagram 900 of FIG. 9. After deciding
to purchase a given product or service, consumer 102 in step 902 enters a request to purchase,
e.g., by selecting an "order" button next to the corresponding vendor in table or other listing
10 displayed by web browser or client application 103. In step 904, an invoice is generated and
presented to the consumer via web browser or client application 103. The invoice may be
generated by transaction engine server 50-1, using information provided in XML, or other
15 suitable format, for the corresponding product or service, and other information, e.g.,
standardized invoicing information. The invoice generation process takes into account stored
consumer preferences 906, which are maintained in step 908 through interaction with the
20 consumer, and stored vendor preferences 910, which are maintained in step 912 through
interaction with the vendor 104 via web browser or client application 105. The consumer
preferences may be collected, e.g., via web form 22 accessible at the consumer-specific pages
25 14. The web form in this case may detail the items within the transaction that need to be
completed for the transaction. For example, if the consumer has done business within the
system in the past, their historical data will automatically be filled in on the form. The vendor
preferences may be collected in a similar manner via web form 28 accessible at the consumer-
specific pages 16. As a result, if the vendor has done business with the system in the past, the
30 vendor preferences will also be presented to the consumer.

20 The invoice generated in step 904 is validated in step 915 upon receipt of a confirmation
from the consumer. The processing system 12 directs the storage of the invoice in a database
35 of customer invoices 916. The system 12 then notifies the affected vendor or vendors in step
918 of the pending invoice. The system 12 will notify the vendor through one or more of the
methods discussed above, e.g., e-mail, facsimile, response management application, individual
40 home page, broadcast, etc., as shown in step 920. In step 922, the vendor accepts payment, and
a completed invoice is delivered to the consumer via, e.g., e-mail, broadcast, etc., as shown in
45 step 924. The method of notification may be selected by the consumer. The completed invoice
30 is also stored by the system in a completed transaction database 926, such that it may be
subsequently reviewed by the consumer in an invoice review 928. The vendor can accept
payment for a given invoice by, e.g., selecting an "accept" button displayed via the web
browser or client application 105. Upon selecting the accept button, the vendor may be asked
to agree to terms for processing the order, i.e., a transaction model. It should be noted that the
50

5 provider of the e-commerce site processing system 12 could charge fees to vendors based on
these events, e.g., could charge a fee to a vendor based on placement of an order with that
vendor, or upon occurrence of another event such as a request for information from that vendor.
Upon agreeing to the terms with a consumer, the vendor may be presented with the consumer
10 5 information to complete the purchase transaction on-line, or may be permitted to contact the
consumer to complete the order through a specified channel. The order may alternatively be
processed through a third party such as a service agency partner or e-commerce partner.

15 The operation of the ad placement engine server 50-5 will now be described with
reference to flow diagram 1000 of FIG. 10. The ad placement engine server 50-5 is responsible
10 for storing and managing advertising to be presented to consumers and vendors. Advertising
placements may exist in several places within the system including, for example, the consumer-
20 specific pages 14, the vendor-specific pages 16, and individual vendor and consumer pages in
the sets of pages 14 and 16. Other advertising placements include vendor retrieval positioning,
i.e., a vendor may pay for the benefit associated with occupying a particular position in a list
25 15 of retrieved vendors or other information displayed to the consumer, cousin associations, e.g.,
a particular vendor may pay to establish a cousin association with a given SIC category or
keyword, and web sites of portal partners. The ad server 50-5 will maintain various types of
information contained in the advertising/placement database 60-5, including all media, ad
placement data, ad clients, vendor placement bids, and agency representatives. The ad server
30 20 50-5 can be configured to distribute ads on a national and local basis, as well as to an individual
consumer and vendor, and thus provides extensive flexibility in ad placement.

35 In step 1002 of FIG. 10, the ad placement engine server 50-5 determines an advertising
category based on the query entered by the consumer 102. The category determination process
makes use of a category database 1004 which is updated in an update step 1005 by management
25 110. In step 1006, the server obtains a banner for the category, using information in a banner
database 1008 which is controlled in a banner validation operation 1009 by management 110.
In step 1012, the server increments a presentation log 1015. The presentation log monitors the
40 number of presentations of particular advertisements, and is used by management 110 in a
billing operation 1016 to generate bills for advertisers. In step 1018, a given advertiser, e.g.,
45 30 vendor 104, pays a bill generated in the billing operation 1016. Step 1020 records click-
through activity of the consumer 102 in a click-through log 1022. For example, each time the
consumer clicks on an advertisement or other information regarding the vendor, it is recorded

5 in the click-through log 1022. Advertisers, such as vendor 104, can request ad inclusion in step
1024, in which case the system will add the ad information to the banner database 1008 and
10 presentation log 1015. As shown in step 1028, the advertisers can also view statistics, such as
15 the number of ad placements within a particular time period, using information gathered from,
20 e.g., the presentation log 1015 and a click-through log 1022.

25 The operation of the community engine server 50-6 will now be described with
reference to flow diagram 1100 of FIG. 11. The consumer 102 interacts with the community
15 engine server via web browser or client application 103. In step 1102, a determination is made
as to whether the consumer wants to join a product forum. If so, appropriate information from
20 the consumer is submitted to forum server 437, from which it may be disseminated to one or
more other consumers in the manner described in FIGS. 4 and 8. Similar forum arrangements
25 can be implemented for services. Management 110 manages the forums in step 1106 using a
web browser or client application 1107. If the consumer would like to join a chat regarding a
particular product or service, step 1108 allows the consumer to join a chat supported by chat
30 server 1110. Management in step 1112 manages the chat server 1110. A chat moderator 1116
uses a web browser or client application 1115 to moderate the chats in step 1114. If the
consumer would like to review a product or service, step 1118 connects the consumer with the
review server 438, such that information from the consumer regarding a particular product or
35 service is stored and disseminated to one or more other consumers. If the consumer would like
20 to join one or more news groups in order to report or to receive news regarding, e.g., particular
products or services, appropriate information is entered in the news server 1124, from which
it may be disseminated in a straightforward manner. Alternative implementations of the
community engine server may process only a subset of the types of information described
above, or other types of information not specifically described.

40 The response management systems 40-1 and 40-2 of FIG. 3 will now be described in
greater detail. Either or both of these response management systems 40-1 may be implemented,
e.g., as a suite of client/server, component based applications which are designed to automate
the notification, analysis, response and management of consumer requests generated in the
45 system 10. These response management systems may be based at least in part on known call
30 center software products, such as one or more of the EDGE™ products available from
Information Management Associates, Inc. of Shelton, Connecticut. By utilizing a response
management system in conjunction with the system 10, vendors will be able, for example, to

5 receive real-time notification of consumer requests, access real-time data regarding consumers,
automatically respond to standard inquiries, track consumer information and transactions, and
access real-time external data on consumers, e.g., demographic and psychographic data, to aid
in the response. An illustrative embodiment of a response management system in accordance
10 with the invention includes a universal access (UA)-channel management (CM) component,
an automatic response component, an outbound response component, a data access component,
a demand chain management (DCM) component, and a customer interaction software (CIS)
15 application component. Alternative embodiments of a response management system in
accordance with the invention may include any subset of these components, as well as
20 additional components not specifically noted.

The UA-CM component allows vendors to utilize a channel that will receive real-time
20 notifications of consumer requests for product information. Vendors are able to customize UA,
e.g., to alert agents to incoming requests, to route incoming requests to specific "agents" who
are trained to respond to system requests, to view requests in a universal in-box available to all
25 authorized agents, and to respond immediately to requests. Vendors may also utilize UA to
integrate all incoming forms of consumer requests such as telephony, print, fax, e-mail and
web. The automatic response component allows vendors to establish criteria for the parsing,
routing and automatic reply to incoming requests. This will, e.g., allow vendors to generate
30 automated responses to minimize agent involvement, reduce response time and provide round-
the-clock customer service. The outbound response component provides the vendor with
20 multiple outbound methods to respond to consumer responses including fax, e-mail, telephone
and web.

35 The data access component of the response management system 40-1 or 40-2 provides
real-time access to various sources of information for retrieving valuable data to assist vendors
40 when responding to a consumer request. This information can include internal data regarding
the consumer's history with the vendor from sources such as mainframes, ERP applications,
or data stores. In addition, data can be accessed from external sources to retrieve credit
information, demographic information, and psychographic information. The DCM component
45 allows vendors to apply sophisticated demand analysis to consumer requests to ensure the most
optimum selling outcome. The DCM component provides real-time demand ranking based on
30 vendor assigned profiling, as well as suggested response strategies. The CIS application
component may include, e.g., an integrated suite of customer interaction applications such as

5 account management, customer service, workflow, opportunity management, etc. It should be noted that these applications can also be used to manage all of the vendor's customer interactions across all communication channels.

10 The invention provides a significantly improved e-commerce buying and selling environment in part by providing consumers with a single point of access to more complete, accurate and timely information on vendors of a given product and service than has heretofore been available, regardless of whether a particular vendor has a web presence or not. Using the invention, consumers are able, e.g., to generate requests for additional information or pricing from their choice of selected vendors; to receive responses from these vendors in a timely manner; to compare easily purchase attributes across multiple vendors; and to access the most efficient avenues to purchase a desired product or service. From the vendor perspective, the invention can, e.g., allow all vendors of a given product or service to be accessible to any and all consumers interested a vendor's product or service. Vendors can be notified of and receive requests from all consumers interested in vendors' products or services; can have real time access to relevant information regarding the consumer to maximize the vendor's ability to serve the consumer, e.g., past history information, credit worthiness and other psychographic and demographic information; and can respond quickly and efficiently to consumers request for information or to purchase a given product or service.

30 More particularly, the invention provides more complete, accurate and timely information to consumers in that it can provide access to all vendors for a given product or service, based on search criteria, e.g., product, price, availability, location, warrantee, financing, etc., defined by the consumer; can provide the greatest range in prices for a given product or service across the widest selection of vendors; can provide automated, autonomous, requests to selected vendors for product info, pricing, finance and warrantee options, etc.; can provide access to persistent information on a consumer accessible web page or via a downloadable applet for off-line analysis; can provide "cousin" relationship or other similar related information retrievals for a given search request, resulting in more comprehensive product options; and can provide product and service level filtering to expedite search retrievals and product comparisons. The invention provides more complete, accurate and timely information to vendors in that it can provide exposure to all available vendors, with or without a web presence, to all interested consumers demanding their products or services; can provide notification to vendors of requests made by interested consumers via response management

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5 system, e-mail, fax, etc.; can provide vendors with the ability to receive, manage and respond
to consumer requests via a vendor accessible "home" page; can provide automated response
systems to manage automate responses to consumer requests; and can provide access to
maximum information related to each consumer including internal data and external
10 information.

15 The above-described embodiments of the invention are intended to be illustrative only.
For example, although the illustrative embodiment of FIGS. 1-3 utilizes sets of consumer-
specific and vendor-specific pages associated with a single e-commerce web site, it will be
apparent to those skilled in the art that the invention can also be implemented in an embodiment
20 in which the functions of the consumer-specific and vendor-specific pages are implemented in
separate web sites, e.g., a separate web site for the consumer-specific pages and a separate web
site for the vendor-specific pages. Other alternative embodiments may utilize other
arrangements of servers, web sites, databases, software applications and other components in
order to provide the e-commerce functions described herein. Moreover, the processing
25 operations of FIGS. 4-11 are examples only, and many other types of processing may be used.
Various components of a system in accordance with the invention can be implemented in
software, hardware, and various combinations thereof. The invention may therefore be
embodied at least in part in software such as web browsers, search engines and other types of
query-processing programs, and in hardware such as various arrangements of clients, servers,
30 processors, memory, databases and other network elements. Such embodiments of the
invention may include a computer readable medium such as a magnetic or optical disk. These
and numerous other alternative embodiments within the scope of the following claims will be
35 apparent to those skilled in the art.

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Claims

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Claims

What is claimed is:

1. A method of implementing an electronic commerce application, the method comprising the steps of:

10 5 associating a plurality of vendor-specific pages, each corresponding to at least one of a plurality of vendors, with at least one electronic commerce web site accessible to a plurality of consumers over a network; and

15 processing a consumer request generated by one of the consumers at least in part using a consumer-specific page associated with the electronic commerce web site, such that

10 10 information from at least a subset of the plurality of vendors is supplied to the consumer via the electronic commerce web site.

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2. The method of claim 1 further including the step of associating a plurality of consumer-specific pages with the electronic commerce web site, each of the consumer-specific pages associated with one of the plurality of consumers.

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30 3. The method of claim 2 wherein the consumer-specific pages include an individual home page for each of at least a subset of the plurality of consumers, such that responses from the plurality of vendors directed to a given one of the consumers are posted to the corresponding individual home page of that consumer.

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35 4. The method of claim 1 wherein the associating step includes associating with the electronic commerce web site an individual home page for each of at least a subset of the plurality of vendors, such that requests from the plurality of consumers directed to a given one 25 of the vendors are posted to the corresponding individual home page of that vendor.

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5. The method of claim 1 wherein at least one of the plurality of vendors has no web presence other than that provided by the electronic commerce web site.

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30 6. The method of claim 1 wherein the processing step includes notifying at least one of the vendors of the consumer request via an e-mail message which includes an embedded identifier of the electronic commerce web site.

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5 7. The method of claim 1 wherein the processing step includes notifying at least one
of the vendors of the consumer request via a facsimile message which includes an embedded
identifier of the electronic commerce web site.

10 5 8. The method of claim 1 wherein the processing step includes notifying at least one
of the vendors of the consumer request by posting it to an individual vendor-specific home page
of the vendor, wherein the home page is associated with the electronic commerce web site.

15 10 9. The method of claim 1 wherein the processing step includes notifying at least one
of the vendors of the consumer request via a communication channel established between the
20 electronic commerce web site and a response management system associated with at least one
of the vendors.

25 15 10. The method of claim 1 wherein the processing step includes supplying information
from one of the vendors to the consumer in response to the consumer request via a message
directed from a corresponding one of the vendor-specific pages to the consumer-specific page.

30 20 11. The method of claim 1 wherein the processing step includes supplying information
from one of the vendors to the consumer in response to the consumer request by posting the
25 information to an individual consumer-specific home page of the consumer, wherein the home
page is associated with the electronic commerce web site.

35 25 12. The method of claim 1 wherein the processing step includes automatically
processing the consumer request in a response management system associated with at least one
40 25 of the vendors, such that response information from the vendor is automatically delivered to
the consumer-specific page.

45 30 13. The method of claim 1 wherein the processing step includes automatically
processing the consumer request in a response management system associated with a service
agency that provides response management functions for at least a subset of the vendors.

5 14. The method of claim 1 wherein the consumer request is a request for a comparison search which generates responses from at least a subset of the plurality of vendors regarding information on a specified product or service.

10 5 15. The method of claim 1 wherein the consumer request is a request for ordering a specified product or service from one of the plurality of vendors.

15 16. An apparatus for implementing an electronic commerce application, the apparatus comprising:

20 10 a processing system operative (i) to establish communication between a set of consumer-specific pages accessible to a plurality of consumers and a set of vendor-specific pages accessible to a plurality of vendors, wherein the consumer-specific pages and the vendor-specific pages are associated with at least one electronic commerce web site, and (ii) to process a consumer request generated at least in part using one of the consumer-specific pages, such that information from at least a subset of the vendors is supplied to the consumer via the electronic commerce web site.

25 17. The apparatus of claim 16 wherein the consumer-specific pages include an individual home page for each of at least a subset of the plurality of consumers, such that responses from the plurality of vendors directed to a given one of the consumers are posted to the corresponding individual home page of that consumer.

30 18. The apparatus of claim 16 wherein the vendor-specific pages include an individual home page for each of at least a subset of the plurality of vendors, such that requests from the plurality of consumers directed to a given one of the vendors are posted to the corresponding individual home page of that vendor.

35 19. The apparatus of claim 16 wherein at least one of the plurality of vendors has no web presence other than that provided by the electronic commerce web site.

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5 20. The apparatus of claim 16 wherein the processing system is further operative to
notify at least one of the vendors of the consumer request via an e-mail message which includes
an embedded identifier of the electronic commerce web site.

10 5 21. The apparatus of claim 16 wherein the processing system is further operative to
notify at least one of the vendors of the consumer request via a facsimile message which
includes an embedded identifier of the electronic commerce web site.

15 10 22. The apparatus of claim 16 wherein the processing system is further operative to
notify at least one of the vendors of the consumer request by posting it to a consumer-specific
page corresponding to an individual home page of the vendor, wherein the home page is
20 associated with the electronic commerce web site.

25 15 23. The apparatus of claim 16 wherein the processing system is further operative to
notify at least one of the vendors of the consumer request via a communication channel
established between the electronic commerce web site and a response management system
associated with at least one of the vendors.

30 20 24. The apparatus of claim 16 wherein the processing system is further operative to
supply information from one of the vendors to the consumer in response to the consumer
request via a message directed from a corresponding one of the vendor-specific pages to the
35 consumer-specific page.

40 25 25. The apparatus of claim 16 wherein the processing system is further operative to
supply information from one of the vendors to the consumer in response to the consumer
request by posting the information to an individual consumer-specific home page of the
45 consumer, wherein the home page is associated with the electronic commerce web site.

50 30 26. The apparatus of claim 16 wherein the processing system is further operative to
automatically process the consumer request in cooperation with a response management system
associated with at least one of the vendors, such that response information from the vendor is
automatically delivered to the consumer-specific page.

5 27. The apparatus of claim 16 wherein the processing system is further operative to automatically process the consumer request in cooperation with a response management system associated with a service agency that provides response management functions for at least a subset of the vendors.

10 5 28. The apparatus of claim 16 wherein the consumer request is a request for a comparison search which generates responses from at least a subset of the plurality of vendors regarding information on a specified product or service.

15 10 29. The apparatus of claim 16 wherein the consumer request is a request for ordering a specified product or service from one of the plurality of vendors.

20 25 30. The apparatus of claim 16 wherein the processing system accesses a plurality of servers and a corresponding plurality of databases to process the consumer request received 15 from the consumer-specific page and to deliver the corresponding retrieved information from one or more of the vendor-specific pages.

30 30 31. The apparatus of claim 16 wherein the processing system stores information regarding at least a subset of the plurality of consumers and at least a subset of the plurality of vendors for use in processing subsequent consumer requests

35 35 32. The apparatus of claim 16 wherein the processing system processes information from the vendors in an extensible mark-up language (XML) format.

40 40 25 33. An article of manufacture comprising a computer readable medium having computer readable code means embodied thereon, said computer readable code means comprising:

45 45 30 a step to associate a plurality of vendor-specific pages, each corresponding to at least one of a plurality of vendors, with at least one electronic commerce web site accessible to a plurality of consumers over a network; and

50 50 30 a step to process a consumer request generated by one of the consumers at least in part using a consumer-specific page associated with the electronic commerce web site, such

5 that information from at least a subset of the plurality of vendors is supplied to the consumer via the electronic commerce web site.

10 34. A method of implementing an electronic commerce application, the method comprising the steps of:

15 associating a plurality of vendor-specific web pages and a plurality of consumer-specific web pages with at least one electronic commerce web site, wherein a processing system associated with the electronic commerce web site controls communications between the vendor-specific pages and the consumer-specific pages of the at least one site; and

20 10 processing a consumer request generated by one of the consumers at least in part using a corresponding one of the consumer-specific pages such that information from at least one vendor corresponding to one of the vendor-specific web pages is supplied to the consumer via the electronic commerce web site.

25 15 35. The method of claim 34 wherein the at least one electronic commerce web site includes at least a first electronic commerce web site associated with the consumer-specific pages and a second electronic commerce web site associated with the vendor-specific pages.

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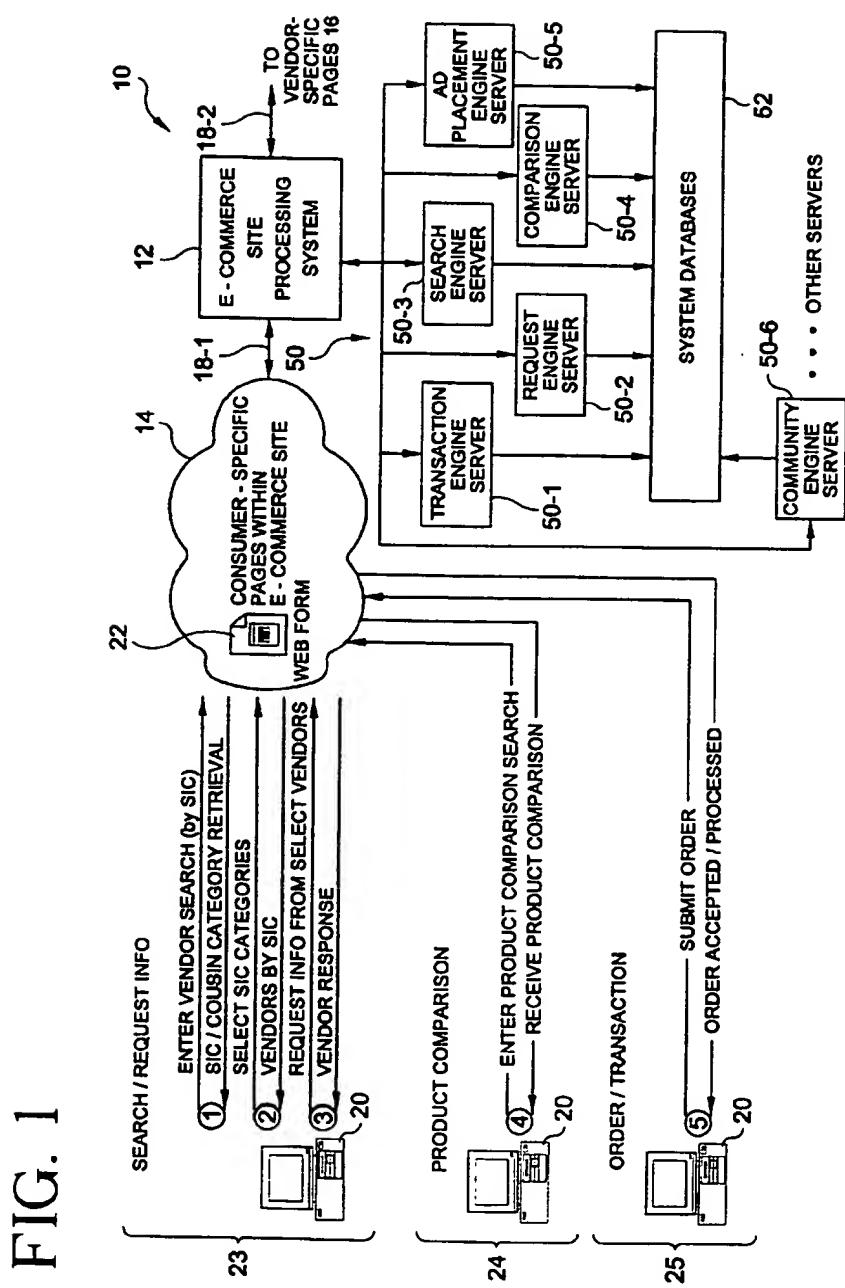
20 36. An apparatus for implementing an electronic commerce application, the apparatus comprising:

35 a processing system operative (i) to establish communication between a first web site including a plurality of consumer-specific pages and a second web site including a plurality of vendor-specific pages, and (ii) to process a consumer request generated at least in part using
25 40 a corresponding consumer-specific page of the first web site such that information from at least a subset of the vendors having vendor-specific pages at the second web site is supplied to the consumer via the consumer-specific page at the first web site.

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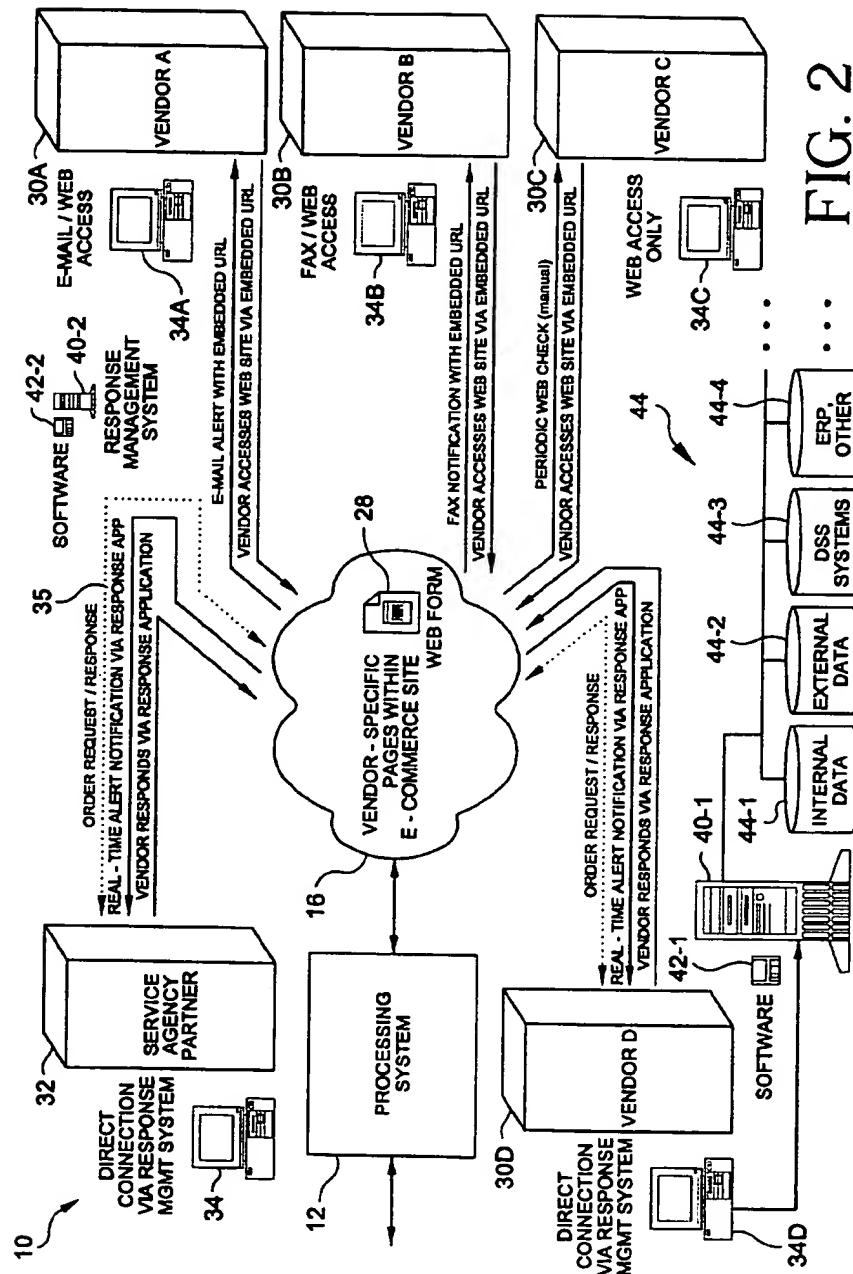
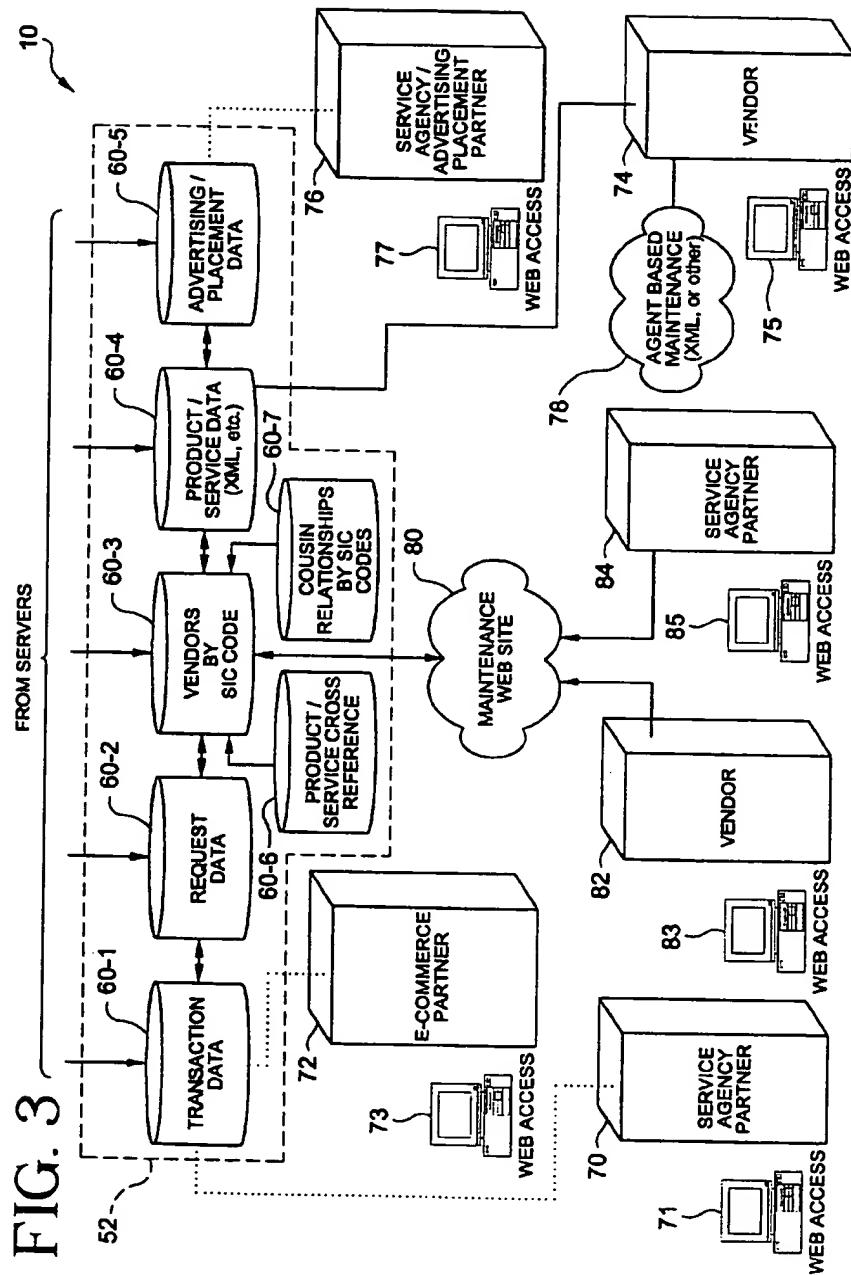
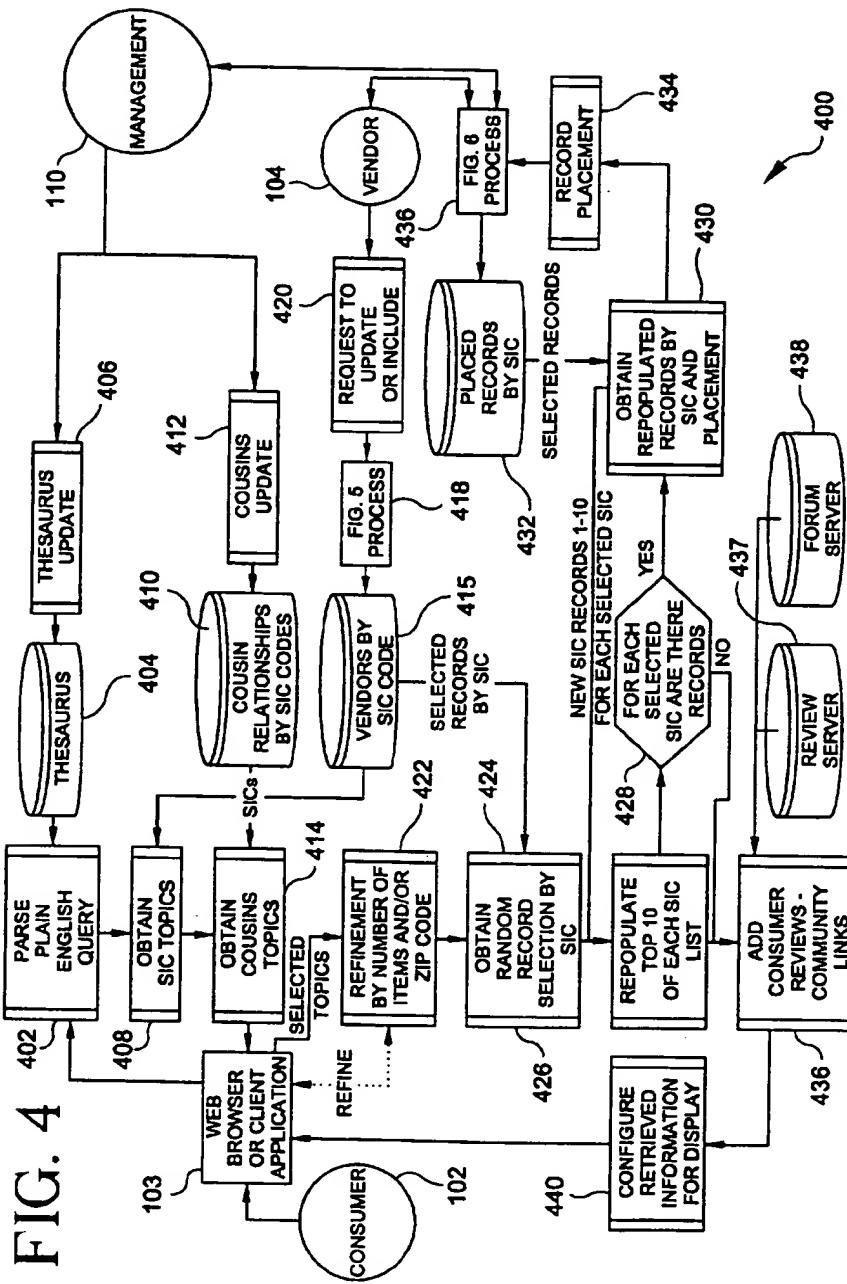


FIG. 2

3/11



4/11



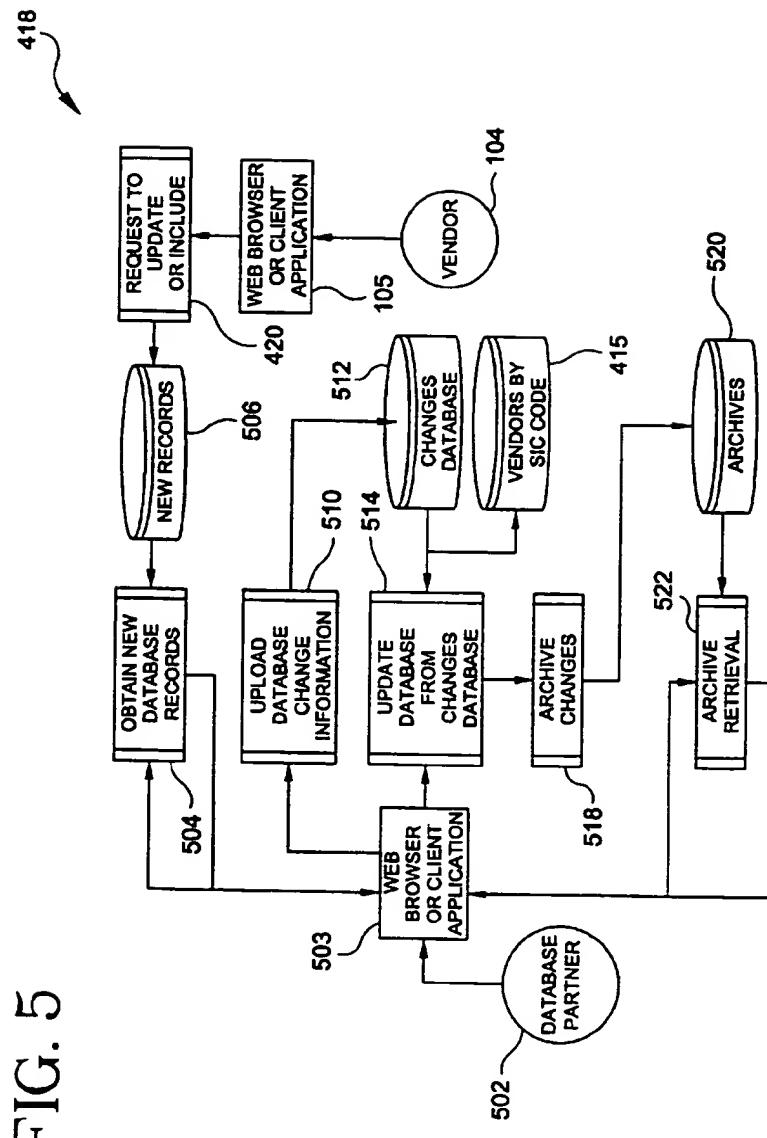
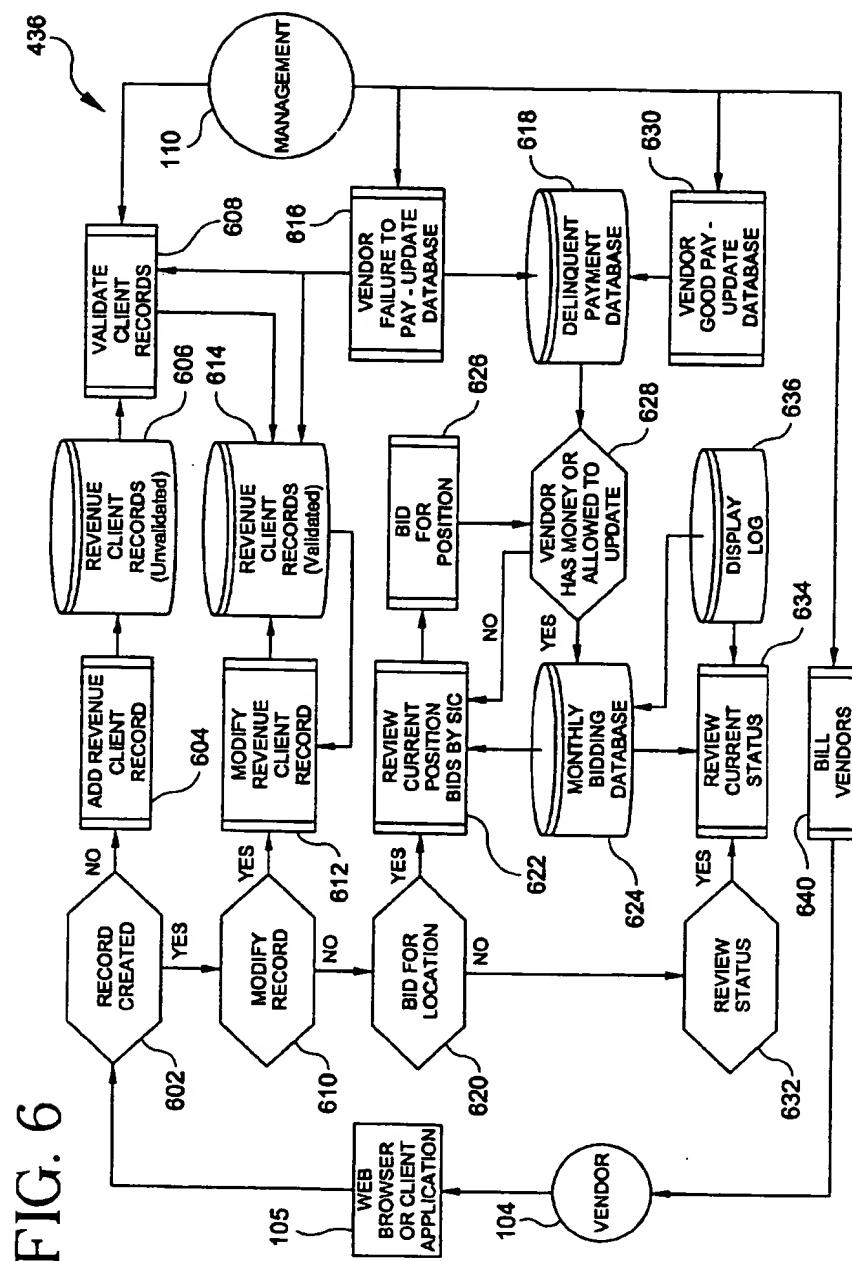
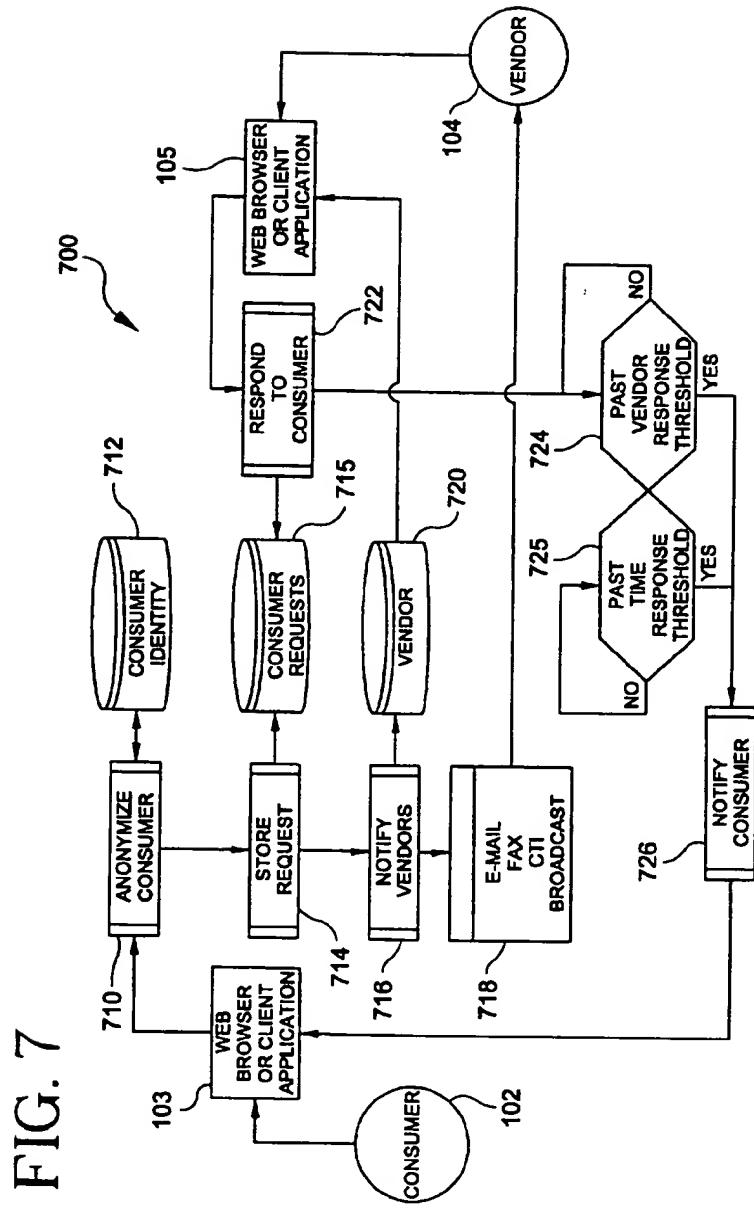


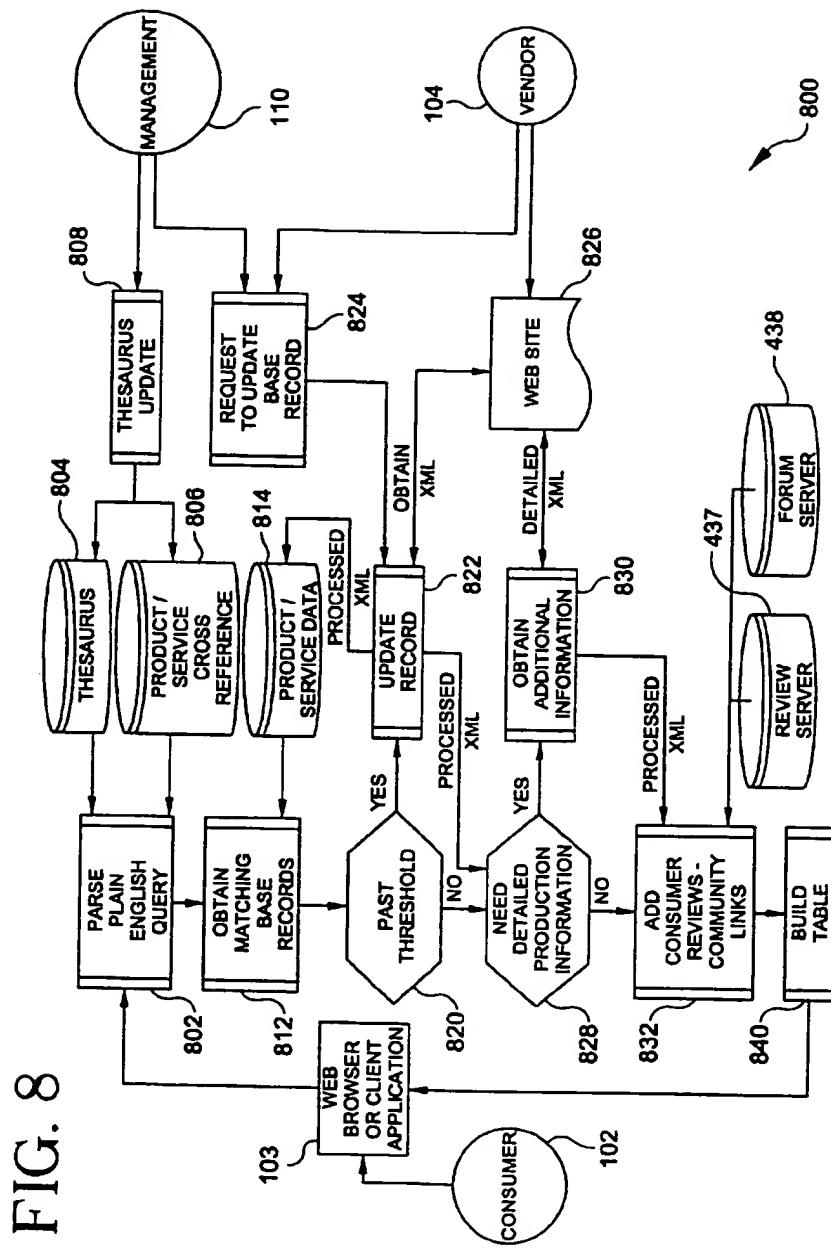
FIG. 5

6/11



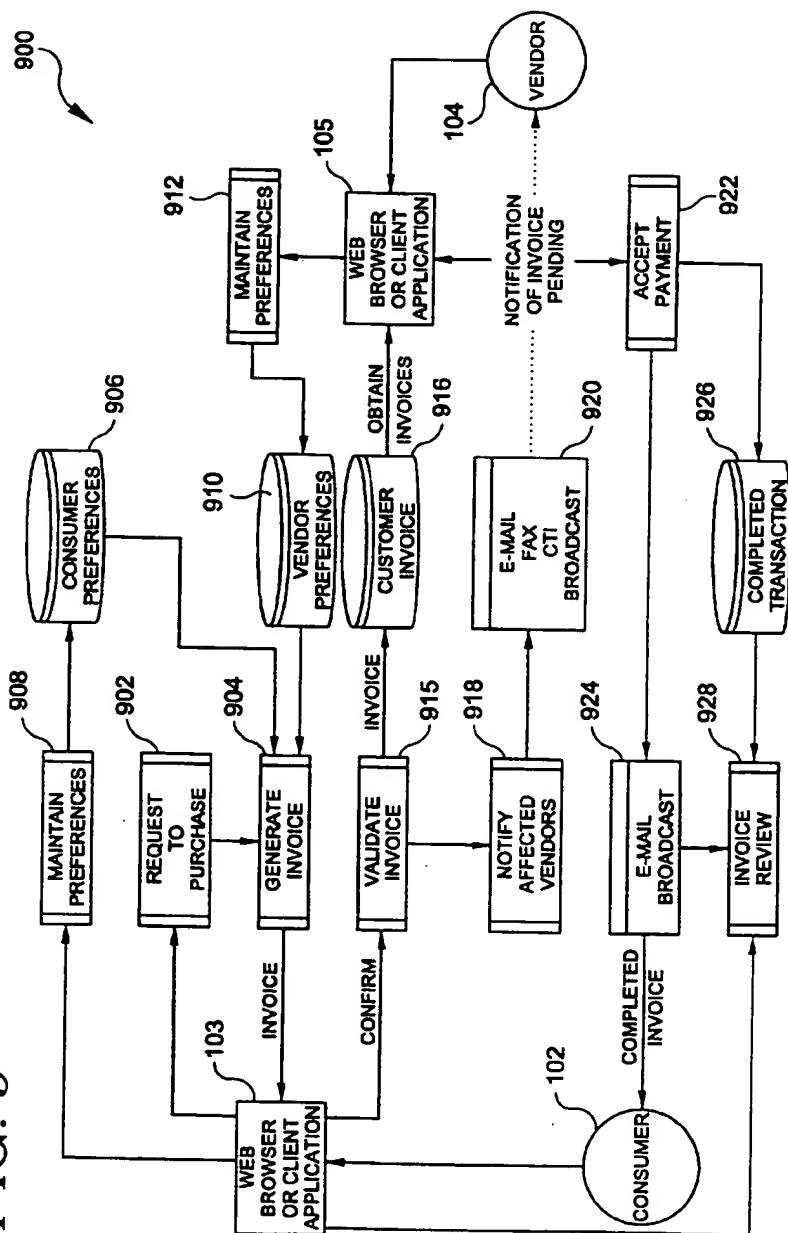


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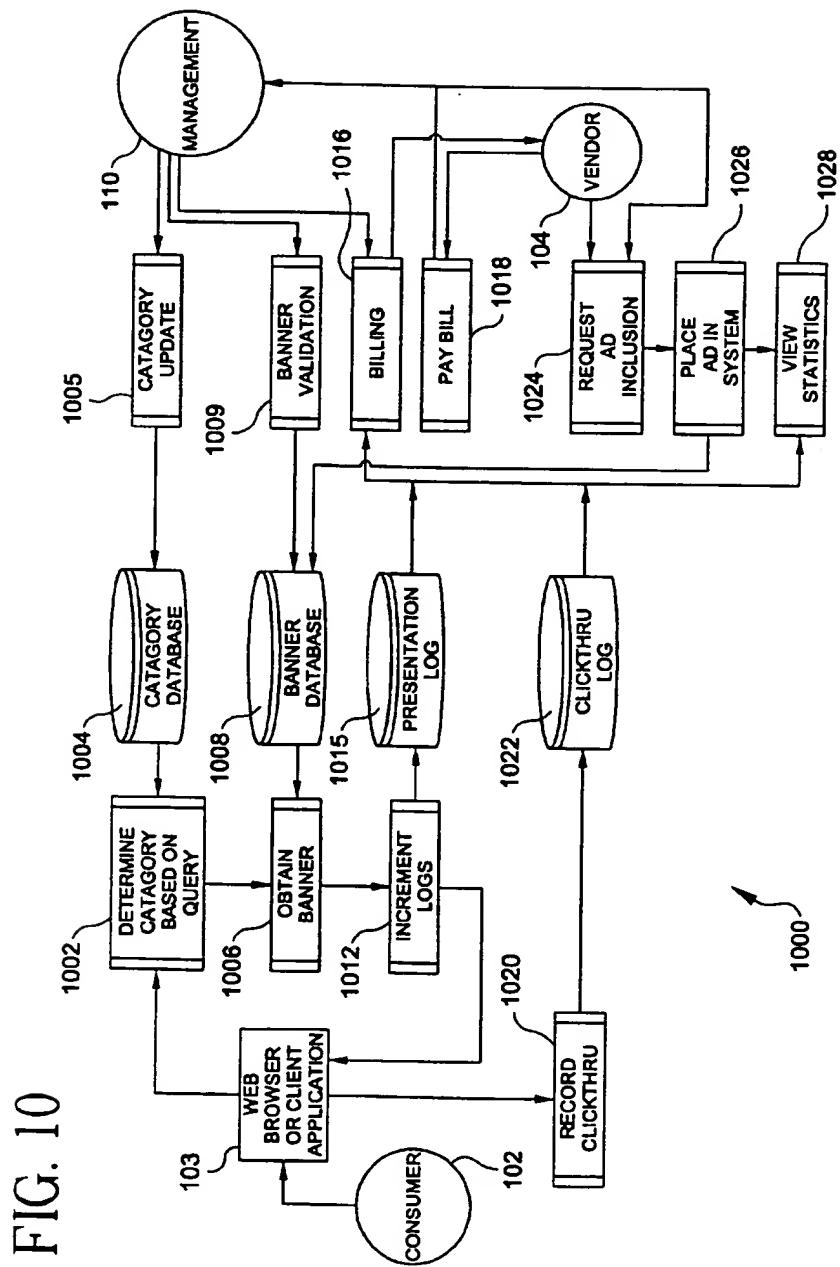


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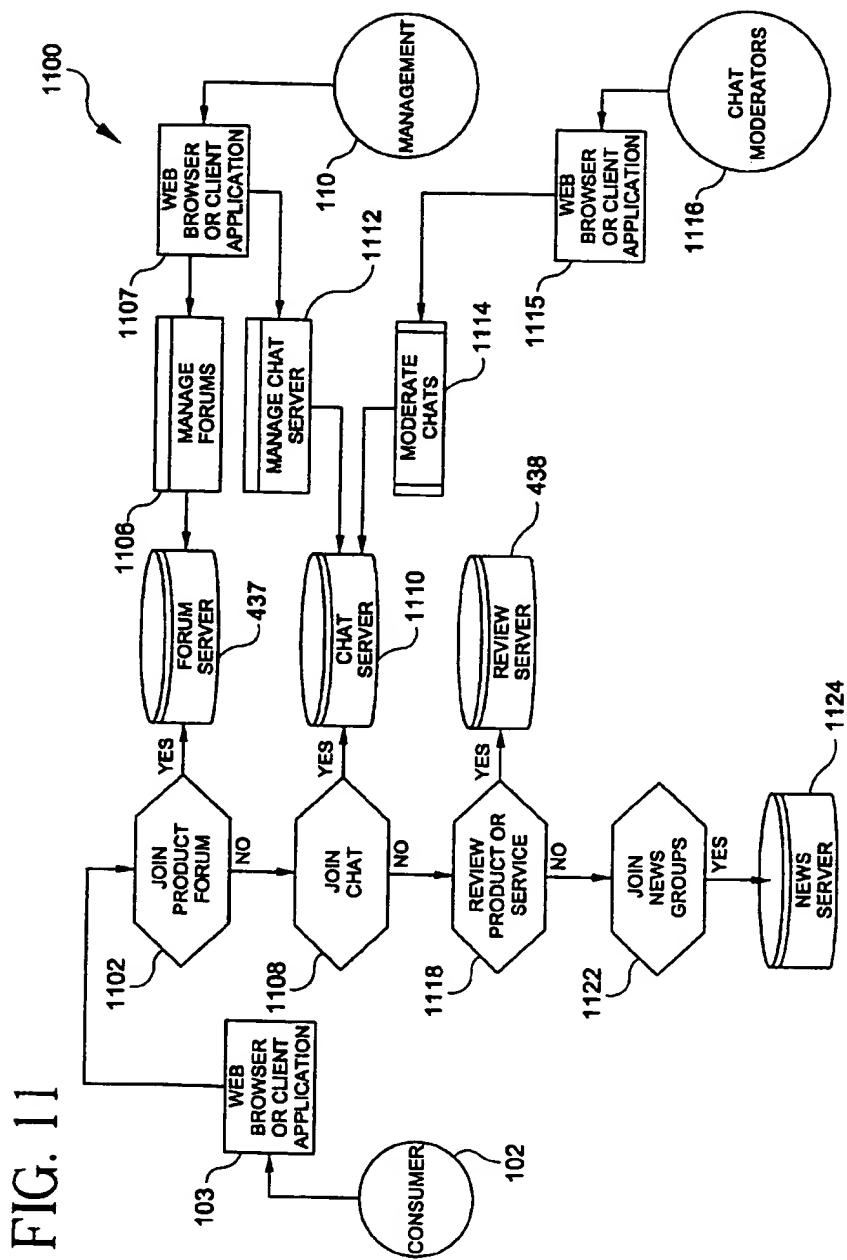
FIG. 9



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INTERNATIONAL SEARCH REPORT

Int'l. Application No
PCT/US 99/26872

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 606F17/60		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 606F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the International search (name of data base and, where practical, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 758 328 A (GIOVANNOLI) 26 May 1998 (1998-05-26) column 2, line 35 -column 3, line 21 column 3, line 55 -column 6, line 11 column 6, line 24 - line 34 column 6, line 66 -column 7, line 47	1-36
A	EP 0 370 146 A (STRATEGIC PROCESSING CORPORATION) 30 May 1990 (1990-05-30) column 7, line 20 -column 10, line 22 column 14, line 28 -column 20, line 44	1-36
A	WO 96 21192 A (CITIBANK, N.A.) 11 July 1996 (1996-07-11) page 4, line 27 -page 9, line 30	1-36
<input type="checkbox"/> Further documents are listed in the continuation of box C.		<input checked="" type="checkbox"/> Patent family members are listed in annex.
<p>* Special categories of cited documents :</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the International filing date</p> <p>"L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the International filing date but later than the priority date claimed</p> <p>"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"Z" document member of the same patent family</p>		
Date of the actual completion of the International search	Date of mailing of the International search report	
27 March 2000	31/03/2000	
Name and mailing address of the ISA European Patent Office, P.B. 5818 Petersdeel 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tel. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Abram, R	

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int'l. Appl. No.
PCT/US 99/26872

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
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WO 9621192 A	11-07-1996	US 5732400 A AU 4854796 A EP 0804772 A		24-03-1998 24-07-1996 05-11-1997

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